

# Work Order ID 83783

**\*83783\***

Page 1

April-25-12 12:51:25 PM

Item ID: D2966-1-BENT

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Skidtube Assembly 105

Start Date: 25/04/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 30/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/04/25

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

Draw Nbr

Revision Nbr

D2966

Rev A

120

0.00

**\*120\***

BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

1-Cut Fwd end of the tube using DT8185-1  
2-Bend tube as per program BO105 on CNC Bender and Dwg D2966. Bend  
folio #1 use bending aid DT9631

DC 12/05/17

150

QC5- Inspect part completeness to step on W/O

0.00

**\*150\***

QC

Memo

0.00

Quality Control

DP 12-5-17

300

Identify as per dwg & Stock Location: LG

0.00

**\*300\***

Packaging

Packaging

Memo

0.00

Packaging

DC 12/05/17

| W/O: |      | WORK ORDER CHANGES |    |      |     |                                     |                          |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |    |      |     |                                     |                          |
|      |      |                    |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                             |                                 |                |                           |                       |                          |
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|      |      |                                  | Initial<br>Chief Eng        | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries

**Work Order ID 83783****\*83783\***

Page 2

April-25-12 12:51:25 PM

Item ID: D2966-1-BENT

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Skidtube Assembly 105

Start Date: 25/04/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 30/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

310

QC21 - Final Inspection - Work Order Release

0.00

**\*310\***

QC

Memo

0.00

Quality Control

12/5/23 *[Signature]*  
MLJ 12/05/22

| W/O: |      | WORK ORDER CHANGES |    |      |     |                                     |                          |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
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|      |      |                    |    |      |     |                                     |                          |
|      |      |                    |    |      |     |                                     |                          |

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|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries

# Picklist Print

April-25-12 12:51:29 PM

Page 1

Work Order ID: 83783

**\*83783\***

Parent Item: D2966-1-BENT

**\*D2966-1-BENT\***

Parent Item Name: Skidtube Assembly 105

Start Date: 25/04/2012

Required Date: 30/04/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev A 10.09.17 New issue EC verified by:DD

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|

|           |  |              |    |  |  |  |      |         |  |   |  |  |  |
|-----------|--|--------------|----|--|--|--|------|---------|--|---|--|--|--|
| D2962-125 |  | Manufactured | No |  |  |  | Each | 17.0000 |  | 1 |  |  |  |
|-----------|--|--------------|----|--|--|--|------|---------|--|---|--|--|--|

**\*D2962-125\***

Outer Tube Extrusion

\*\*

*Dr 12/05/17*

Location

Loc Qty

Loc Code

HALL

17

17532

17

*(1)*

| W/O: |      | WORK ORDER CHANGES |    |      |     |                                     |                          |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |    |      |     |                                     |                          |
|      |      |                    |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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|      |      |                                  | Initial<br>Chief Eng        | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries



|                  |                |                                          |                        |
|------------------|----------------|------------------------------------------|------------------------|
| DESIGN<br>RF     | DRAWN BY<br>RF | DART AEROSPACE USA, INC.<br>BELLEVUE, WA |                        |
| CHECKED<br>#     | APPROVED<br>#  | DRAWING NO.<br>D2966                     | REV. A<br>SHEET 1 OF 2 |
| DATE<br>00.03.08 |                | TITLE<br>BO 105 SKIDTUBE ASSEMBLY        | SCALE<br>NTS           |
| A                | 00.03.08       | NEW ISSUE                                |                        |

RELEASED  
00.05.11 #

| Qty | Part Number                                                               | Description       |
|-----|---------------------------------------------------------------------------|-------------------|
| X   | D2966-041                                                                 | SKIDTUBE ASSEMBLY |
| 1   | D2962-125                                                                 | EXTRUSION         |
| 1   | D2964                                                                     | CAP               |
| 1   | D2965                                                                     | CAP               |
| 1   | D2970-1                                                                   | WEARPLATE         |
| 1   | D2970-3                                                                   | WEARPLATE         |
| 1   | D2971                                                                     | CROSS BOLT SPACER |
| 7   | D2973                                                                     | CROSS BOLT SPACER |
| 1   | D2976                                                                     | WEB               |
| 36  | ALS7-1032-130<br>or ALS4-1032-130<br>or AKS7-1032-130<br>or AKS4-1032-130 | INSERT            |
| 28  | AN960JD10L                                                                | WASHER            |
| 26  | MS27039-1-08                                                              | SCREW             |
| 2   | MS27039-1-09                                                              | SCREW             |
| 1   | D3176-1                                                                   | BUSHING           |
| 1   | D3176-3                                                                   | NUT               |

SHOP COPY  
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UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 83783 MJS  
12/01/25



#### GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) WELDING TO BE DONE PER DART QSI 004.
- 3) INSERT D2976 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- 4) USE DART DRILL TEMPLATE DT8451 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION B-B (34 PLACES) AFTER FINISH. SEAL WEARPLATE SCREWS WITH SIKAFLEX-241/-291.
- 5) DO NOT INSTALL MS27039-1-08 SCREWS AND AN960JD10L WASHERS IN THESE LOCATIONS.
- 6) INSTALL ALS7-1032-130 INSERT, MS27039-1-08 SCREW, AND AN960JD10L WASHER IN 2 PLACES THIS LOCATION BEFORE POWDER COATING.
- 7) FINISH:

ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2976 WEB  
POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART  
QSI 005 4.4 (OPTIONAL) BLACK SANDTEX (REF 4.3.5.7)



# 01.01.24  
CP 01.01.30

|    |          |                               |      |
|----|----------|-------------------------------|------|
| A2 | 02.10.30 | ADD D3176-1/-3                | # CP |
| A1 | 01.01.24 | CHANGE COLOR TO BLACK SANDTEX | # CP |

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| W/O: |      | WORK ORDER CHANGES |    |      |     |                                     |                          |
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|      |      |                    |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

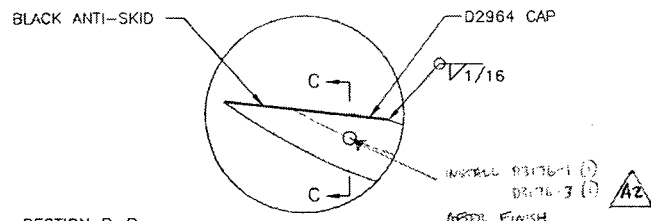
| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                             |                                 |                |                           |                       |                          |
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|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries

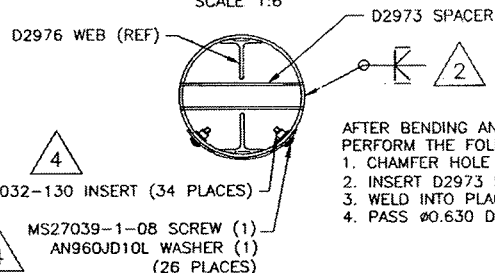


83783

DETAIL A  
SCALE 1:3

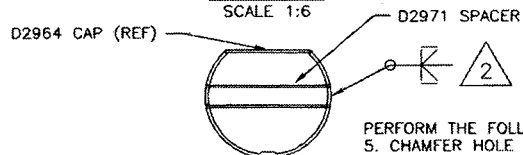


SECTION B-B  
SCALE 1:6



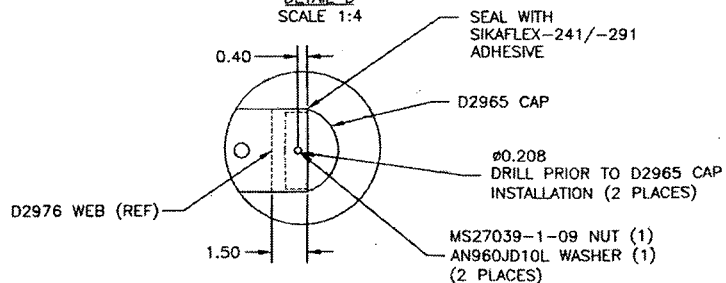
AFTER BENDING AND DRILLING ASSEMBLY  
PERFORM THE FOLLOWING FOR  $\phi 0.750$  HOLES ONLY:  
1. CHAMFER HOLE  $0.030 \times 45^\circ$   
2. INSERT D2973 SPACER (7 PLACES)  
3. WELD INTO PLACE AND GRIND FLUSH  
4. PASS  $\phi 0.630$  DRILL TO REMOVE SPILL OVER

SECTION C-C  
SCALE 1:6

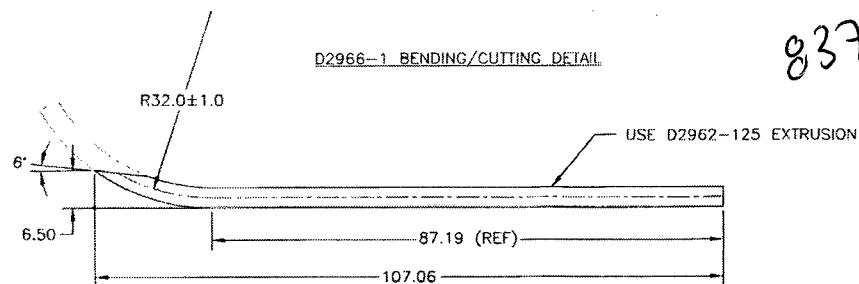


PERFORM THE FOLLOWING FOR  $\phi 0.750$  HOLES ONLY:  
5. CHAMFER HOLE  $0.030 \times 45^\circ$   
6. INSERT D2971 SPACER  
7. WELD INTO PLACE AND GRIND FLUSH  
8. PASS  $\phi 0.630$  DRILL TO REMOVE SPILL OVER

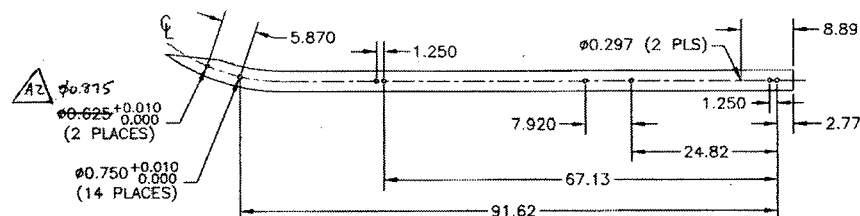
DETAIL D  
SCALE 1:4



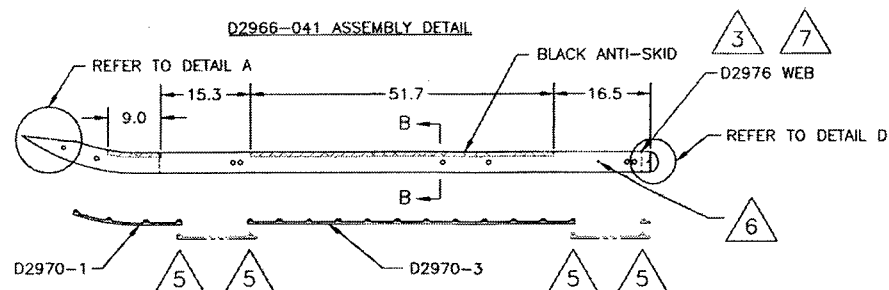
D2966-1 BENDING/CUTTING DETAIL



D2966-1 DRILLING DETAIL



D2966-041 ASSEMBLY DETAIL



|                                                                                                                                                                                                                                                    |  |                                   |                |                                                      |                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------|----------------|------------------------------------------------------|------------------------|
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| DATE<br>00.03.08                                                                                                                                                                                                                                   |  | TITLE<br>BO 105 SKIDTUBE ASSEMBLY |                | SCALE<br>1:20                                        |                        |

RELEASED  
02-05-11

| W/O: |      | WORK ORDER CHANGES |    |      |     |                                     |                          |
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|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |

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